6. WHAT IS CLAIMED IS:

1. Optical-fiber communication equipment comprising, a laser light source, a means for changing light of the laser light source to a parallel plane wave to form a parallel light path, a wavelength selection means having two or more transmission bands, and a first and a second light detector, wherein:

said wavelength selection means is located in the parallel light path;

the parallel plane wave is divided into at least two pieces of light including light that is transmitted through said wavelength selection means and light passing through a medium having optical characteristics different from those of the light that is transmitted through said wavelength selection means;

the first light detecting means detects one divided piece of light and the second light detecting means detects the other divided piece of light;

signals based on photocurrents from the first and the second light detector are compared to each other to obtain a signal for setting an emitting wavelength of the laser light source to a desired value; and

said signal is used for controlling a wavelength of the laser light source.

2. Optical-fiber communication equipment according to Claim 1, wherein:

said wavelength selection means is a Fabry Perot type etalon in which:

a refractive index of its medium is within a range of 1.0 to 4.0;

surface reflectivities of both reflection planes of the medium are within a range of 20 to 70%; and

a thickness of the medium is set so that a plurality of light transmission portions are generated at given wavelength intervals, and that any one of the plurality of light transmission portions is equivalent to an emitting wavelength desired by the laser light source.

3. Optical-fiber communication equipment according to Claim 1, wherein:

said wavelength selection means is a Fabry Perot type etalon constructed of two or more kinds of materials, which differs each other in at least one of temperature characteristics and a refractive index.

4. Optical-fiber communication equipment according to Claim 1, wherein: Lacks ant. basis

a thickness of said Fabry Perot type etalon, which depends on a channel grid interval of wavelength division multiplexing optical-fiber communication, is set to a value that is shifted from a free spectral range of the Fabry

Perot type etalon, and thereby temperature characteristics of transmission characteristics of the Fabry Perot type etalon is compensated.

5. Optical-fiber communication equipment according to Claim 1, wherein:

said laser light source is located at a position that is shifted from an optical axis of the means for changing light of the laser light source to a parallel plane wave to form a parallel light path; or a normal line of an incident end face for said wavelength selection means or the laser-light dividing means is located so that the normal line crosses the optical axis of the means for changing light of the laser light source to a parallel plane wave to form a parallel light path.

6. Optical-fiber communication equipment comprising, a laser light source, a means for changing light of the laser light source to a parallel plane wave to form a parallel light path, an optical system for dividing the parallel plane wave, a wavelength selection means, and a first and a second light detector, wherein:

said wavelength selection means is located in the parallel light path;

said wavelength selection means has a plurality of light transmission portions having desired wavelengths existing at given wavelength intervals;

any one of the plurality of light transmission portions corresponds to an emitting wavelength desired by the laser light source;

said optical system for dividing the parallel plane wave divides the parallel plane wave into at least two pieces of light including light that is transmitted through said wavelength selection means and light passing through a medium having optical characteristics different from those of the light that is transmitted through said wavelength selection means;

the first light detecting means detects one divided piece of light and the second light detecting means detects the other divided piece of light;

signals from the first and the second light detector are compared to each other to obtain a signal for setting an emitting wavelength of the laser light source to a desired value; and

said signal is used for controlling a wavelength of the laser light source so that the wavelength is kept to be a given wavelength.

7. Optical-fiber communication equipment according to Claim 6, wherein:

said wavelength selection means is a Fabry Perot type etalon in which:

a refractive index of its medium is within a range

of 1.0 to 4.0;

surface reflectivities of both reflection planes of the medium are within a range of 20 to 70%; and

a thickness of the medium is set so that a plurality of light transmission portions are generated at given wavelength intervals, and that any one of the plurality of light transmission portions is equivalent to an emitting wavelength desired by the laser light source.

8. Optical-fiber communication equipment according to Claim 6, wherein:

said wavelength selection means is a Fabry Perot type etalon constructed of two or more kinds of materials, which differs each other in at least one of temperature characteristics and a refractive index.

9. Optical-fiber communication equipment according to Claim 6, wherein:

a thickness of said Fabry Perot type etalon, which depends on a channel grid interval of wavelength division multiplexing optical-fiber communication, is set to a value that is shifted from a free spectral range of the Fabry Perot type etalon, and thereby temperature characteristics of transmission characteristics of the Fabry Perot type etalon is compensated.

10. Optical-fiber communication equipment according to Claim 6, wherein:

said optical-fiber communication equipment comprises an information storing portion, and said laser light source comprises a temperature detecting means;

the information storing portion stores temperature characteristics of a light transmission portion of the wavelength selection means; and

according to a signal from the temperature detecting means and said stored temperature characteristics of light transmission portion of the wavelength selection means, a shift of an emitting wavelength of the laser light source from a channel-grid wavelength of said wavelength division multiplexing optical-fiber communication is compensated.

SubA'

~~11. Optical-fiber communication equipment according to any one of Claim 1 through Claim 8, wherein:~~

~~said laser light source is located at a position that is shifted from an optical axis of the means for changing light of the laser light source to a parallel plane wave to form a parallel light path; or a normal line of an incident end face for said wavelength selection means or the laser-light dividing means is located so that the normal line crosses the optical axis of the means for changing light of the laser light source to a parallel plane wave to form a parallel light path.~~

12. Optical-fiber communication equipment comprising, a laser light source, a means for changing light of the

laser light source to a parallel plane wave to form a parallel light path, an optical system for dividing the parallel plane wave, a wavelength selection means, and a first and a second light detector, wherein:

said wavelength selection means is located in the parallel light path;

said laser light source is a laser light source that is capable of lasing at a plurality of lasing wavelengths;

said wavelength selection means has a plurality of light transmission portions having desired wavelengths existing at given wavelength intervals;

the wavelength interval of the light transmission portions is equivalent to a channel grid interval of wavelength division multiplexing optical-fiber communication;

any one of said plurality of lasing wavelengths of the laser light source is equivalent to an emitting wavelength corresponding to a desired wavelength that is shifted to a wavelength portion having the highest transmittance among said plurality of light transmission portions provided by the wavelength selection means;

said optical system for dividing the parallel plane wave divides the parallel plane wave into at least two pieces of light including light that is transmitted through said wavelength selection means and light passing through a

medium having optical characteristics different from those of the light that is transmitted through said wavelength selection means;

signals based on photocurrents from the first and the second light detector, which receive each of said divided pieces of light, are compared to each other to obtain a signal for setting an emitting wavelength of the laser light source to a desired value; and

said signal is used for controlling each of said plurality of lasing wavelengths provided by the laser light source so that each lasing wavelength is kept to be a given wavelength.

13. Optical-fiber communication equipment according to Claim 12, wherein:

said wavelength selection means is a Fabry Perot type etalon in which:

a refractive index of its medium is within a range of 1.0 to 4.0;

surface reflectivities of both reflection planes of the medium are within a range of 20 to 70%; and

a thickness of the medium is set so that a plurality of light transmission portions are generated at given wavelength intervals, and that any one of the plurality of light transmission portions is equivalent to an emitting wavelength desired by the laser light source.

14. Optical-fiber communication equipment according to Claim 12, wherein:

said wavelength selection means is a Fabry Perot type etalon constructed of two or more kinds of materials, which differs each other in at least one of temperature characteristics and a refractive index.

15. Optical-fiber communication equipment according to Claim 12, wherein:

a thickness of said Fabry Perot type etalon, which depends on a channel grid interval of wavelength division multiplexing optical-fiber communication, is set to a value that is shifted from a free spectral range of the Fabry Perot type etalon, and thereby temperature characteristics of transmission characteristics of the Fabry Perot type etalon is compensated.

16. Optical-fiber communication equipment according to Claim 12, wherein:

said optical-fiber communication equipment comprises an information storing portion, and said laser light source comprises a temperature detecting means;

the information storing portion stores temperature characteristics of a light transmission portion of the wavelength selection means; and

according to a signal from the temperature detecting means and said stored temperature characteristics of light

transmission portion of the wavelength selection means, a shift of an emitting wavelength of the laser light source from a channel-grid wavelength of said wavelength division multiplexing optical-fiber communication is compensated.

17. Optical-fiber communication equipment according to Claim 12, wherein:

said laser light source is located at a position that is shifted from an optical axis of the means for changing light of the laser light source to a parallel plane wave to form a parallel light path; or a normal line of an incident end face for said wavelength selection means or the laser-light dividing means is located so that the normal line crosses the optical axis of the means for changing light of the laser light source to a parallel plane wave to form a parallel light path.